The Computerized Network of Israeli University Libraries

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Abstract

The last five years have been a period of electronic revolution in Israeli university libraries. During these years, large scale computerization has been carried out. Introduction of the automated systems to the libraries has improved both local library services and the level of resource sharing among the libraries.

A national network has been created under the auspices of the governmental office which finances the universities. The aim of this network is to improve co-operation among the libraries. The network is governed by a committee in which library directors are members. This committee is responsible for preparation and supervision of software development. Maintenance of the software is performed centrally.

All university libraries use the same software on the same type of hardware. Each participating library had to accept this basic condition in order to receive the special grant for the acquisition of a computer and software. 'Aleph', an integrated library system developed in Israel, has been chosen to be the network software. The same search codes are used in all university libraries. This simplifies use for the readers. The libraries' computers are connected by special telecommunication lines. MARC cataloguing data are held on the central network computer.

Future plans include installation of a facsimile network among university libraries in order to speed up delivery of requested documents. This article deals mainly with the network management.

1. Introduction

The last five years has been a period of electronic revolution in Israeli university libraries. During these years, large-scale computerization has been carried out. Introduction of automated systems to the libraries has improved both local library services and the level of resource sharing among the libraries. A national network of University libraries has been created under the auspices of the Council for Higher Education, the aim of which is to improve co-operation among the librarians.

Co-operation among libraries had existed for many years before automation was introduced. There was the Union Catalogue of Serials on microfiche and a regular interlibrary loan service. However, neither librarians nor faculty were content with the level of co-operation; better and faster access to information was needed. This became more vital after a long period of budget cuts, as a result of which libraries became more dependent on one another's collections. Improving interlibrary services became linked with the creation of accessible computerized databases. This could not be done without first introducing automation to the individual libraries, which is an expensive project. The Council for Higher Education, which was interested in encouraging co-operation among the universities, including their libraries, decided to support this project.[1] The Council has the financial means, and it is through this body that the universities receive their governmental budget support.

For several years before 1984 it was debated whether the university libraries network should be centralized or decentralized. Centralization would have meant that all libraries would use one large computer via a network of telecommunications. In effect, it is most difficult to operate such a system. As well as the technical problems, a high level of uniformity in daily procedure is required. Libraries prefer not to give up their individual routines even for the benefits of the network.

A decentralized network allows each university to run its housekeeping individually and to accept network rules only in areas where they are needed. Telecommunications linking library computers is a necessary condition for the network to be effective. This decentralized trend is much more realistic. The computerization of each library can progress according to local needs and financial ability, and the network can be built gradually. Of course, even a decentralized network needs compatible hardware and software for all participants.

The final decision was influenced by the fact that the Hebrew University of Jerusalem began operating 'Aleph' software. 'Aleph' is an integrated library system, developed in Israel in the Hebrew University. When this system proved to be successful, other university libraries (there are seven universities in Israel) became interested in introducing it to their institutions. The Council for Higher Education, which was interested in creating a university library network, studied the subject in depth and in the summer of 1984 reached the decision to support individual library computerization as a step towards the creation of a network. The council adopted the decentralized attitude, which meant co-ordinated automation on local computers, and the software chosen for the network was 'Aleph'.

'Aleph' is an integrated library system in which library functions are performed online from one database. At present it includes the following functions: cataloguing, online public catalogue, circulation and periodical registration; the function of acquisition of books and periodicals is under development. The software is bilingual, Hebrew and English, flexible, and can meet the special demands of most libraries, or a central library with branch libraries.

The Technion library served as a pilot project. It received financial support for the acquisition of a local VAX computer for 'Aleph' software and on the result of this experiment depended further development of the decentralized network. At the same time, other libraries were allowed to receive support for use of 'Aleph' on the Hebrew University computer, via telecommunications. Each university receiving support from the Council for Higher Education had to accept the following conditions:

(1) allocation of an equivalent budget from its own resources,
(2) use of 'Aleph' software according to rules determined by the 'Aleph' Steering Committee.

The most important decision was that 'Aleph' would be developed and maintained centrally.

A steering Committee was appointed by the Council for Higher Education to direct the national network. The members of the committee are: directors of the university libraries, directors of two university computer centres, an 'Aleph' representative, and, of course, a representative of the Council for Higher Education. The duties of the Steering Committee were defined as follows:

(1) direction of future 'Aleph' development from the point of view of software, hardware, and library needs;
(2) inspection of the service given by 'Aleph' staff to the libraries which are members of the network;
(3) recommendations to the Council for Higher Education regarding the use of budget allocations for the network development.

Time has proved the Steering Committee to be a practical body whose efforts have led to achievements in library computerization. The backing received from the Council for Higher Education was the main key to success, as it was a power to influence and a source of funds. The Steering Committee actually runs the network. During almost four years it has dealt with various subjects such as contracts and prices of software and hardware, telecommunications problems, software development and improvement which is still a major issue, union catalogues and unified search codes, software documentation, and maintenance.

There were difficulties all along the way. Out of seven university libraries in Israel, two hesitated to join the network: one because it had already developed local software, the other because it wanted to try different software. Joining the network was, and still is, voluntary. The disadvantages of not being a part of the network are that the library does not get the special grant for purchase of a local computer and it loses the advanced bibliographic connection with the other libraries in the country.

Eventually, both the above-mentioned libraries decided to join the network. One of these, Haifa University, has its own software, and the transfer to 'Aleph' is being carried out gradually. For some modules, this library continues to use its own software parallel to 'Aleph'.

In most universities in Israel there are several libraries in each institution; so that at this stage not all the libraries are fully computerized, because the

network is expanding gradually according to the financial ability of each university.

2. Software development

In 1984 when the Steering Committee started its activity, large parts of 'Aleph' software were still not fully developed. This was an advantage because it gave the Steering Committee the possibility of directing the software development according to the network's needs, together with each individual library's requirements. This has been the main task of the Committee during the past years. Administratively, it is a difficult task. Demands for development originate from many libraries. Each library has its priorities and its point of view, so that the preparation of a list of demands, which is acceptable to all the network members, is a complex job. The Technion Library volunteered to do the fieldwork during the first two years. Software development demands from all the Israeli university libraries were classified, checked, and co-ordinated. It was important that all the libraries understood and accepted the proposals. The final lists were transmitted to the Steering Committee, which discussed them, decided on priorities, and prepared a yearly plan for software development, taking into consideration the remarks and reservations of 'Aleph' staff. During the last two years, professional committees, whose members are representatives of the various university libraries, have taken responsibility for continuing the fieldwork of preparing software development requests. This is especially important in areas which are not fully developed, like the acquisition of books and periodicals. In other modules there is also a continuous need for improvement and further progress. Additional requests and suggestions are transmitted by the libraries' directors directly to the Chairman of the Steering Committee.

The yearly plan does not always achieve its goals, but the 'Aleph' staff must report to the Committee from time to time regarding progress. There is not always consensus among the librarians themselves, or between the 'Aleph' team and the Steering Committee, regarding demands and their priorities, and there is usually controversy between the Steering Committee and 'Aleph' staff regarding the tempo of progress. However, problems of this kind are unavoidable in such a large and complex project. Nevertheless, most librarians are satisfied with the results, and their criticism is mainly directed at the time they have to wait for their requirements to be fulfilled.

'Aleph' software is very flexible. It does not compel all libraries to work in the same manner, and allows each library to make its own administrative decisions without preventing participation in the network. This is due to the fact that the requirements of the various libraries were presented in the early stages of the software development. In some cases, where important requests could not be fulfilled without rewriting parts of the software, they were implemented thanks to the power of the Steering Committee and its ability to take care of additional payments if justified.

Although not perfect, these results are remarkable since the network has no administrative employees. All the work is done voluntarily by senior librarians from the various libraries, who understand that the success of computerization of their library goes hand in hand with the network's success.

3. National catalogues

The main aim of the network is to create a national catalogue of books and periodicals. This is necessary to speed up the interlibrary lending system. A full national catalogue of serials already exists. A special software solution is being programmed to enable automatic update of this catalogue from the local university catalogue.

The local libraries' computerized catalogues are similar in their formats. This is, of course, a result of using the same software. According to the decision of the Steering Committee, the search codes are the same in all the university library catalogues, this enabling a clear transfer of data from one catalogue in the network to another. Readers using the terminals in each university can search all other catalogues in the network (unless there are communication problems) and it is possible not only to search different libraries' catalogues, but also to copy records.

A MARC file is held on the central network computer. It is possible to copy a MARC record on the local computer, and it can be transferred to 'Aleph' format if requested. The establishment of a national catalogue of short records was decided upon. This catalogue will include all the records which appear in all university catalogues. For full details it will be necessary to search the appropriate catalogue. A special professional committee, of which senior cataloguers are members, is co-ordinating the cataloguing procedures among the university libraries.

4. Contracts and prices

The Steering Committee takes an active part in negotiations regarding contracts and prices of both software and hardware. The special price for software offered to the Israeli universities is one result of this activity. This special price was on account of the 'Aleph' software's development in the Hebrew University of Jerusalem, which, like other Israeli universities, receives a major part of its budget from the government.

The Steering Committee was also involved in the first contract for 'Aleph' software which was signed by the Technion Library. It was agreed that this contract would be a prototype for the other universities in the country. For this reason, representatives of the Steering Committee participated in the negotiations, and, because of their pressure, 'Aleph' staff had to make stronger commitments to technical data concerning system performance. It was decided that the 'Aleph' acceptance test would be made by the Technion Library on behalf of the other university libraries.

A special appendix has been attached to the Technion's contract, detailing the 'Aleph' software prices for operation on different sizes of VAX computers. This agreement is valid for all Israeli universities. The annual cost for 'Aleph' software maintenance and development was fixed in co-ordination with the Steering Committee, and it is not open to negotiation with individual universities. This is the result of the network decision that maintenance and further software development should be done centrally. Changes in price are subject to confirmation by the Steering Committee.

5. Hardware and communications

A major achievement of the Steering Committee has been that all the university libraries operate the same hardware. Two different versions of 'Aleph' software could function on two types of computers: Control Data Machines (CDC) and Digital Equipment Corporation (DEC) VAX computers. From the software point of view, it is much more efficient to develop the network on one type of computer.

In the beginning, a CDC version of 'Aleph' was used at the Hebrew University of Jerusalem. The other universities preferred the VAX version, mainly because the equipment for the first stage was cheaper, and additional computer power could be added gradually. When the Hebrew University was faced with the decision of expanding computerization in its libraries, the Steering Committee used its power to influence the university authorities to replace the equipment with VAX computers. The VAX version of 'Aleph' is much more modern and more flexible.

The university libraries network uses DECNET software together with special communication lines. There are technical problems with the lines, mainly with their speed. The Steering Committee is trying to find better solutions on a national level. The Steering Committee encouraged software solutions which would enable the use of remote terminals or personal computers, in addition to the libraries' terminals. Today such solutions are available to university clients through local campus networks. There are special arrangements for external readers who wish to use the network or parts thereof. Thought was also given to charging external clients who use the network catalogues. Service to external readers is restricted because the computers of most university libraries are too small and overloaded. This situation will probably change in the future.

6. Central maintenance

'Aleph' software is maintained centrally for all the libraries participating in the network. This was a basic condition fixed by the Council for Higher Education, for libraries joining the network. The efficiency of central maintenance is clear: a solution found for a software problem in one library can be used for the benefit of other libraries. Changes, corrections, and improvements,

gathered gradually during several months, are added to the next software version, and a new version is supplied to all the network libraries at the same time.

As mentioned above, changes in the cost of maintenance are negotiated by the Steering Committee. This committee occasionally tries to define rules regarding the level of service which should be given by the 'Aleph' staff to the university libraries.

In order to protect the investment already made in hardware and software, and in order to ensure the uninterrupted functioning of 'Aleph', the Steering Committee recommended preparation of full documentation of the software. The Council for Higher Education adopted this recommendation and decided to finance this expensive project. This documentation is meant to support the library system in times of crisis, and to limit the dependence on 'Aleph' staff.

7. Future developments

A network is created in two stages. The first is the introduction of computerization to the university libraries. The second is the establishment of telecommunications routines and procedures necessary for the network to operate. Most university libraries in Israel have already passed the first stage. In the near future, efforts will be directed mainly at improving the efficiency of the network, for which improved telecommunications among the university libraries is a major issue. Technical solutions for maintaining the national book index have also been given priority. An experiment using facsimile machines, which would speed delivery of photocopied articles, has been planned.

Until now, the network management has been voluntary, and is performed by the Steering Committee with the help of senior librarians from the various libraries. Some of the technical work is done by the 'Aleph' staff as part of the central maintenance. The Steering Committee intends to maintain this situation for the future, wherever possible.

The university libraries network in Israel is a remarkable achievement. It became possible as a result of the integration of several factors at the same time: the tradition of co-operation and resource sharing among the libraries, the encouragement and budgetary help received from the Council for Higher Education, and the availability of 'Aleph' software. Additional efforts are still needed in order to maintain and to improve these achievements.

References

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